

# CH Pilot Project

December 2002

## **SUMMARY**

The primary objective of the Chicago Operations Office (CH) Long-Term Stewardship (LTS) pilot project was to enhance planning for long-term stewardship implementation. CH has three sites, or portions of sites, that can be ready for long-term stewardship over the next several years. These sites have continuing non-EM missions under the Office of Science or the Office of Nuclear Energy and, by DOE policy, stewardship responsibilities are expected to be transferred to the “landlord” for each site by the end of FY 2006. These sites (Argonne National Laboratory East, Argonne National Laboratory West, and Brookhaven National Laboratory) have important similarities but differing site conditions.

***Similarities*** include continuing, non-EM research & development missions; cleanup activities as relatively small but important and visible components of each site’s activities, and near-term completion of planned EM activities. ***Differences*** include site locations (IL, ID, NY); physical considerations (underlying geology; environmental contaminants and media); regulatory frameworks (RCRA for ANL-E; primarily CERCLA for ANL-W and BNL); size of cleanup programs; magnitude and complexity of expected post-implementation stewardship activities; and level of stakeholder awareness and involvement.

Under the pilot, CH identified draft site-specific requirements for LTS, evaluated the current status of its sites in meeting these requirements, noting potential improvements (such as streamlining of monitoring requirements), and documented the processes used to perform these analyses. CH also evaluated the extent to which LTS elements are captured within existing site systems, such as Environmental Management Systems, and in systems available to the entire complex. It is important to note that the LTS “requirements,” other than operations and monitoring or surveillance activities required by law, regulation, or DOE Order, were based on draft guidance and are likely to change as the involved program offices develop their own guidance for LTS implementation.

The process of identifying LTS elements and draft requirements was very beneficial for CH and its sites. Although site life-cycle baselines under the cleanup programs long had included estimated costs and some assumed durations of activities associated with LTS (such as continuing monitoring [site and remedy]; surveillance; treatment system operations; and maintenance), this was the first time that concerted and sustained effort was applied to broader aspects of LTS planning. The annotated outlines and draft LTS implementation plans included, under one upper-level document, LTS activities already underway under EM; LTS activities in place under site “landlord” programs; and facilities likely to enter into LTS after EM scope transitions to the Lead Program Secretarial Office (LPSO). As the pilot project got underway, key questions and potential issues surfaced regarding organizational “ownership,” information management,

and appropriate levels of stakeholder involvement. Information and processes developed during the project should have applicability to a range of sites across the complex, particularly those with continuing missions.

### **Upcoming Sites**

#### **Argonne National Laboratory East**

- RCRA-related work will be done in FY 2003; about \$500K of annual O&M and considerable operating experience (level of information/program management costs to be determined by LPSO).

D&D work shut down in FY 2002; 3 projects remain. Draft Performance Management Plan submitted for FY 2004 consideration. Additional “pipeline” projects NOT included at this time.

#### **Brookhaven National Laboratory**

- IAG-related work (including BGRR) in-place/complete by end of FY 2005 (Performance Management Plan)
- Non-IAG-related work (HFBR) assumed to be complete at end of FY 2008
- Some technical issues and end states still need resolution

#### **Argonne National Laboratory West**

- Geographic Site completion taken in FY 2001
- Ongoing phytoremediation completed early FY 2003
- 2 additional sites – one active, one recently inactive – to be cleaned up in future

As site planning progressed, additional costs were proposed to address additional requirements (real or perceived) under the then-current guidance. Continuing O&M costs are generally well understood, with contingency developed for more complex ongoing remedies such as multiple groundwater treatment systems at BNL. Less well understood are reasonable levels of program management costs (including appropriate methods of information management and dissemination) as well as efficient and effective organizational placement within the Lab structures, for these sites with continuing non-EM missions. All three CH “pilot project” sites propose to integrate LTS within existing “landlord” programs, under current or developing EMS. Expectations now are that sites will work, with the non-EM LPSOs (e.g., the Office of Science [SC] and the Office of Nuclear Energy [NE]), to identify appropriate information management and staffing requirements.

## **BACKGROUND**

The concerted efforts that cumulated in the CH LTS pilot project were first envisioned as a “One Chicago” initiative championed under the former DOE Center for Risk

Excellence (CRE) in early CY 2001. That initiative drew upon the varied expertise of CRE, the Environmental Measurements Laboratory (EML), and Argonne National Laboratory (ANL) to assist the Department's Office of Long-Term Stewardship (LTS) program by:

- Enhancing the planning for long-term stewardship implementation to include innovative approaches and technology deployment,
- Augmenting existing CH LTS planning efforts in specific areas of need,
- Demonstrating the opportunities to reduce the costs and risks of long-term stewardship,
- Identifying additional LTS activities or policies where the Department's capabilities in science and technology R&D can potentially reduce costs and risks, and
- Pilot testing prevailing Departmental guidance on long-term stewardship planning by creating draft LTS plans for 2-3 CH sites.

These objectives and the corresponding results were planned to respond to the LTS transition planning requirements of the December 15, 2000, memo from T.J. Glauthier (then S-2) and the January 19, 2001, memo from C. Huntoon (then EM-1).

The proposal closely aligned with initial planning efforts under the DOE LTS Program under EM-51, and was revised in accordance with the EM-51 call for LTS "pilot" proposals issued in May 2001. The broad intent of the "pilots" was to foster LTS implementation at DOE sites and to facilitate exchange of useful information across sites. The CH proposal was selected in July 2001 and awarded \$298K, to be leveraged by \$300K of funding and other resources from DOE-CH (Office of Program and Project Management and Environmental Measurements Laboratory) and Argonne National Laboratory.

Planned activities under the CH LTS pilot can be summarized as follows:

- Identifying site-specific requirements for Long-Term Stewardship (including initial proposed requirements or conditions for site transition to LPSOs)
- Evaluating current status of CH sites in meeting these requirements
- Identifying opportunities for streamlining & improvements
- Evaluating integration of Long-Term Stewardship elements within existing site management systems.

Additionally, each site analyzed the usefulness of then-current draft guidance for the purposes of site-specific LTS planning.

Coordination among sites and other CH participants was enhanced by monthly meetings and by use of an LTS "team" Intranet site. The Intranet site provided team members with

easy access to draft guidance documents and to draft deliverables as they were developed. Also included was a folder to capture “lessons learned.”

The LTS Pilot was conducted from August 2001 through July 2002 and resulted in the following draft deliverables for each site:

- Site-Specific Requirements in Support of LTS Transfer;
- Annotated Outline of LTS Implementation Plan;
- Gap Analyses and Mortgage Reduction Opportunities; and
- Draft LTS Implementation Plans (ANL-E and ANL-W only)

An Implementation Plan was not prepared for the BNL site, as implementation of remedial actions were projected to occur several years further in the future and a number of end-state and scope uncertainties were yet to be addressed.

Initial cost estimates and schedules also were developed as part of the CH LTS pilot documentation. The estimates included known or projected costs of operations and maintenance and surveillance and monitoring for completed and ongoing remedies (including some activities currently performed under the LPSO); initial information management activities; and general organizational and administrative requirements. As the information management and administrative requirements were based on early draft guidance that may have been more suitable for sites that were expected to have little or no continuing DOE presence, these estimates must be considered rough drafts at this time.

## **DISCUSSION/ISSUES**

Several issues were identified as likely to impact initiation of transfer activities once environmental remedies are in place. Some of these are internal issues, such as needs for sustained high-level communication and direction across CH and within the sites, specific transfer elements, and resource availability for continued planning. Other issues could profit from additional HQ involvement. These include confirmation or elaboration of DOE’s policies on LTS transfer to landlord programs; clarification of DOE guidance on LTS planning and implementation; and resolution of budget issues (such as establishing reliable funding mechanisms). CH and its sites are concerned that DOE programs may not have a common understanding and interest in LTS planning and implementation.

In accordance with DOE policy (S-2 memorandum of December 15, 2000) the responsibilities for LTS of EM sites requiring long-term remedial actions are planned to be transferred to the site landlord.

## **LTS Integration**

For CH sites, LTS activities represent only one element of ongoing environmental management efforts, many of which are already financed and managed by the site

landlords. The LTS program for these sites cannot be properly understood unless its position within the larger context of environmental management is understood.

Elements of environmental management that will likely be involved in the LTS program after the transfer include land use management, ground water monitoring, environmental compliance, surveillance and monitoring (S&M) program, waste management operations, Health Physics, and other elements of the CH laboratory sites, predominantly as the responsibility of the current LPSO.

CH sites concluded that LTS efforts should be integrated into existing environmental management efforts. Site environmental management systems (EMS), where they exist or are planned, will be utilized for this integration. Through time, the LTS “plans” for the CH sites likely will become upper-level documents that will contain or reference a large volume of information describing the nature of the LTS program; completed and ongoing restoration operations; ongoing inspection, maintenance, monitoring, and other requirements; and the nature of residual risk associated with closed sites. This information, along with the EM baseline and the site transition schedules, will provide the technical basis for the site LTS activities.

In addition to defining the LTS work scope, information that describes, in general terms, other similar environmental management requirements should also be compiled and described briefly. Listing this information will help to define the magnitude and nature of the larger environmental management program into which the LTS program will fit.

A critical component of the LTS planning effort will be estimating future costs for LTS activities. The EM baseline costs should be used as a starting point for LTS activities. A review should be conducted to ensure all activities have been identified along with a cost estimate (based on actual costs where available) prior to transferring responsibilities to the lead PSO.

A realistic schedule for LTS activities is needed. Major events and milestones should be scheduled to the extent such events are understood. Key scheduled events include LTS starting dates, periodic performance reviews, anticipated completion dates for LTS activities at specific sites, and dates for final site closure or facility demolition. Any assumptions used to develop the cost estimate and schedule need to be documented.

LTS responsibilities are expected to reside with the LPSO, including responsibilities for operation of treatment systems, institutional controls, monitoring, surveillance, maintenance, and periodic regulatory reviews as required (for example, CERCLA 5-Year Reviews). Consistent with more recent guidance, the LPSO also will determine the appropriate level of LTS planning and implementation for each site for activities not driven by regulatory requirements (including DOE Orders).

## **ISSUES REQUIRING RESOLUTION**

Numerous unresolved issues related to the transfer of EM sites have been identified. To the extent possible, the resolution of these issues should be captured within the LTS Plan

in the form of definitions of terms, statements of responsibility, description of work scope or other elements of the plan. The following is a summary of issues known at this point in time, under the general categories of “technical” and “administrative” issues.

### ***Technical Issues Affecting LTS Work Scope***

#### **Scope of the LTS Program**

The sites and activities that would come within the responsibility of the LTS program need to be defined. Current draft DOE guidance describes LTS scope as activities such as routine monitoring; operation, inspection, and maintenance of remedial actions; institutional controls; and information management that will be conducted at closed or long-term remedial action waste sites with residual contamination.

Similar, though less extensive, responsibilities exist even with "clean-closed" sites. For example, project records that document that a site was cleaned up must be retained and made available to future land users. This is especially true of sites with some contamination still present, even if it is below the risk-based remediation goals. Elements of future remedial action work that will be required for some former EM sites include possible repair, upgrading, or replacement of remedial systems; performing periodic performance reviews of remedial actions; and performing final site closures. Other related tasks that may or may not be considered LTS work scope may include S&M of radiological facilities and routine environmental compliance reporting. In many cases these ongoing activities are currently the responsibility of the LPSO. A critical part of the planning process will be to identify all environmental restoration elements that the LPSO will be responsible for after the transfer. A clear designation of responsibility for planning, scheduling and executing these future actions must be identified.

#### **Approach to LTS for D&D of Surplus Facilities**

A number of contaminated facilities are within the current EM baseline for CH. Several facilities will require limited LTS activities (such as surveillance and monitoring) even after D&D work is completed. Each site also has additional facilities that are now excess, or will become excess as research programs change and newer facilities come on line. While such “pipeline” facilities are outside the scope of the current EM program at CH, ultimate disposition of such facilities such be included within site LTS planning. A DOE-wide policy decision is needed to clarify EM/other LPSO responsibilities for “pipeline” excess facilities.

In early FY 2002, the ANL-E D&D program was halted for an undetermined period because of funding limitations. This decision left three projects incomplete: Building 301 Hot Cells, the Zero Power Reactor (ZPR), and the Juggernaut Reactor. The Building 301 project will have some D&D completed but not all. The latter two projects will have only characterization complete. All three structures, plus Building 330, the Chicago Pile-5 (CP-5) Reactor building, will be in an S&M mode indefinitely.

Future D&D work being proposed for possible inclusion in the EM program at ANL-E, when and if that program accepts new projects, includes the Building 200 M-Wing and the demolition of Buildings 330 and 301. Whether the responsibility for ongoing S&M of the incomplete projects, the remaining D&D work, and subsequent LTS activities for Building 301, the ZPR, and the Juggernaut Reactor will be transferred to SC or remain with EM needs to be determined.

The scope and resources for cleanup and LTS activities associated with future contaminated excess BNL facilities are not included in the current EM baseline. For example, the HFBR and BMRR will require some degree of D&D and stewardship in the relatively near future (note: the HFBR D&D project is within the EM program; a baseline will be validated after CD-O). Looking much further out in the time line, managing activated soil shielding from the AGS facility could also involve cleanup and stewardship responsibilities. An understanding on how this issue will be addressed is needed.

Currently, no D&D work is being conducted at ANL-W. The EBR-II primary and secondary sodium systems have been placed in an industrially and radiologically safe condition. These sodium systems will have ongoing S&M until Decontamination and Decommissioning are performed. However, IDEQ is requiring that treatment (either by physical removal or chemical reaction) of these systems be performed. It needs to be determined how RCRA requirements, that fall in between S&M and D&D activities, are to be incorporated into the LTS program.

### **Future Environmental Restoration Work for Non-EM Sites**

Environmental restoration work may be necessary if previously unknown historic waste or contamination is discovered, or new contaminated sites are created through leaks or spills of hazardous or radioactive materials. Such actions are not the focus of current LTS planning; however, they represent significant future potential cost that should be acknowledged as part of the overall environmental management program at the CH sites. Identifying the likely roles of EM and the LPSO regarding these future actions would assist in the planning of LTS actions.

### **Future Environmental Restoration Work for Former EM Sites**

Even after all former EM units at CH Laboratories meet the transfer criteria (yet to be fully defined), some sites will require additional environmental restoration work in the future. Such future environmental restoration work may be needed at a closed site due to failure of a prior remedial action (e.g., cap deterioration, phytoremediation tree damage, flooding of a contaminated facility, etc.), a change in site conditions (e.g., change in groundwater flow path, change in land usage, new construction, etc.), or the identification of a more effective technology that will reduce residual risk or cost. Periodic performance assessments of operating remedial systems and final closure of No Further Action sites (e.g., removal of wells, final verification samples, facility demolition) are also needed

and will have an impact on future budgeting and costs. A clear designation of responsibility for planning and executing these future actions needs to be identified.

## **LTS Planning Window**

The length of time that LTS requirements will remain in effect is unknown but is likely to be very long, on the order of decades. The LTS program is likely to undergo many changes within its lifetime. The nature and timing of these changes are impossible to anticipate at this time. The LTS Plan should be prepared with a reasonable "planning window" in view. Detailed planning for events beyond the planning window should not be attempted. The plan should be written such that as the end of the planning window approaches, the plan will be updated. The length of this planning window (five years? three years?) has not yet been determined.

## **Key Planning Assumptions**

To complete the LTS Plan, a number of assumptions about the nature of the future remedial actions will need to be made, including the following.

- Land use - Identifying the necessary stewardship requirements depends on the anticipated future use of the site. The anticipated usage is likely to remain much as it is now; however, the assumed usage should be verified by DOE management and clearly spelled out in the LTS Plan.
- Site ownership and management - The assumed owner and manager of the site throughout the planning window should be identified.
- Technical assumptions - Assumptions regarding the likely progression of the remedial actions in place during the planning window should be spelled out where possible. These assumptions should be based on an assessment of actual performance of the remedial actions to date.
- Regulatory agency actions - Changes in laws, regulations, cleanup standards, regulatory personnel, or relationships with regulatory agencies could profoundly change the nature and magnitude of LTS requirements. Assumptions describing the expected regulatory environment during the planning window should be described. Input from the applicable regulatory agencies in developing these assumptions should be sought.
- Duration of LTS activities - The actual duration of LTS activities is impossible to predict precisely. Therefore, assumptions regarding the length of such activities should be developed and used to prepare the LTS Plan.

## **Final Site Disposition**

The ANL-E, ANL-W and BNL sites are assumed to have continuing non-EM research & development missions for the foreseeable future. However, to the extent possible, the likely final disposition of these sites should be identified (for example: release of land to the public for industrial or agricultural use). Subsequent LTS requirements should be based on these assumptions and updated in accordance with such documents as site facility plans and land use control plans.

### ***Administrative Issues Related to Implementing the LTS program***

#### **Criteria for Transfer from EM to LPSO**

The criteria for determining when EM environmental restoration waste sites are ready for transfer need to be defined. When all remedies have been implemented, many waste sites or Areas of Concern will have met part of their remediation goals but will have longer-term operation and require long term surveillance and monitoring.

A primary issue to be resolved is the years of operational experience needed to establish the effectiveness of these actions and identify possible needs for future modifications. Operational experience also enhances confidence in the reliability of baseline estimates. An example for ANL-E would be the 317 Area French Drain, which has considerable residual contamination and where innovative remedial actions were deployed. While all anticipated remediation efforts have been completed, several more years of operational experience may be needed before the effectiveness of these actions and the need for future modifications and enhancements would be known. For BNL, examples of sites where this is a major issue are the 17 groundwater remediation systems. Remedies are planned to be in place by FY 2005 at these sites; however, significant liability, in terms of continued operation of remedial systems and potential additional restoration actions (possible treatment of the Magothy aquifer) exist. Another example is the transfer of decontaminated radiological facilities that will still require surveillance and monitoring, as well as periodic maintenance, after D&D activities are completed.

The transfer of sites that have no further action status or free-released D&D sites should present few problems.

The primary transfer issue for ANL-W likely will be the ownership and timing of remedy of two sites that were active operating facilities when EM undertook remediation of other waste site locations on site. EM and NE have initiated discussions on this topic with the intent of reaching resolution during FY 2003.

#### **Identifying the Point in Time When the Transfer Will Occur**

The anticipated date for the transfer needs to be identified to ensure adequate time is allotted to all parties concerned to complete their up-front work, and to ensure that funding mechanisms are well understood and in place. Another consideration is whether transfer occurs when ALL EM scope has been completed, or whether a portion of a site

(or an entire suite of similar remedies, such as groundwater treatment systems) can be transferred pending completion of other activities.

For example, ANL-E could transfer the “contaminated environmental media” portion of its responsibilities to the LPSO as early as FY 2004 (if funding were identified) or FY 2005, pending resumption of D&D work. Similarly, for BNL the groundwater remedies and Peconic River cleanup are expected to be in place and fully operational and soils remediated by the end of 2005. The D&D and stabilization of the HFBR research reactor is not expected to be completed before the FY 2008/FY 2009 time frame.

A related issue is what point in time, after remedial construction is complete, the transfers would occur. For some sites that require continuing remedial actions, considerable uncertainty regarding the scope and the cost of continuing operation and maintenance activities may exist for the first several years. This is particularly true of some groundwater treatment system operations (e.g., the BNL Sr-90 treatment systems). As more operating experience with these systems is obtained, the degree of uncertainty will decrease. Under some circumstances, it would also be useful to go through at least one cycle of the Five Year Review process to gain a better understanding of the specific performance requirements from the regulatory and stakeholder members and the resulting resources required to meet such requirements. (The first comprehensive Five Year Review for the entire BNL site is scheduled for May 2005.) Some remedial activities, such as monitoring and maintaining landfills caps, are straightforward and likely would not require extensive site-specific experience. The landlord and EM need to come to an understanding regarding acceptable “start-up” times following construction before the transfer can occur.

The transfer of ANL-W EM sites is expected to occur in FY 2003 or FY 2004, with limited LTS activities such as ongoing monitoring and institutional controls.

## **Renegotiation Triggers**

Criteria for triggering the renegotiation of the transfer agreement should be established. Such a set of criteria would provide an agreed-upon threshold for renegotiating the agreement in response to major problems with completed remedial actions, changes in land usage, changing cleanup standards, or other scope changes that are beyond the agreed-upon LTS scope transferred to the LPSO.

## **Natural Resource Damages**

Under CERCLA, damages for injury to, destruction of, or loss of resources, including the reasonable costs of assessing damages, are recoverable from responsible parties. In the case of BNL, damages to the aquifer and or the Peconic River could be considered natural resource damages. The organization responsible for these potential liabilities must be identified

## **Management Approach**

The organizational approach for implementing the LTS program must be defined for each site. Integrating LTS requirements into the various existing environmental management organizational functions will not be a trivial undertaking. In considering integration, many issues arise including the following:

- Ensuring adequate incremental funding to cover the additional requirements;
- Ensuring efficient information flow and decision making among the various entities;
- Providing adequate management oversight to ensure that LTS requirements are being met ;
- Ensuring adequate technical management to ensure the effectiveness of the remedial actions;
- Maintaining the exit strategies and site delisting (where appropriate);
- Oversight of institutional controls and property access agreements; and
- Ensuring adequate regulatory and stakeholder participation in LTS issues.

## **Funding of LTS Activities**

Adequate funds are critical to the success of the program. The mechanism for allocating funds to support LTS activities must be determined, e.g. will activities be funded using site overhead funds or by specific allocation? Considering the projected LTS costs at BNL (in the range of \$7M a year), it may be impractical and infeasible to fund LTS activities by having LTS compete for site overhead funds.

The continuity of future funding is also a significant concern. Should DOE reprioritize funding, there is a potential that some LTS activities at the sites might not be fully funded.

## **Stakeholder Involvement**

DOE policy (Geiser memo, Oct. 26, 2001) states that site stakeholders should be consulted regarding LTS issues. The degrees of involvement of the stakeholder community and the mechanisms to ensure such involvement have not been determined but would be expected to occur in relation to ongoing site outreach efforts, such as site Community Relations Plans.

## **Transition Documentation**

The nature of any formal transfer agreements, transition plans, Memoranda of Understanding, or other vehicles needed to facilitate the transition need to be identified and their development addressed in the schedule.

## **Transition Schedule**

To facilitate the transfer, a timeline of important events and required completion dates must be established. The transition is assumed to be the year following implementation of planned remediation activities. Because of the federal budget cycle, a number of activities may need to be initiated very soon to ensure that the necessary funding will be in place. The point in time the transition will occur will influence the schedule for transition. Establishing a schedule for these events is a critical first step.

Discussions with SC suggest that transition scheduling should begin at least two years prior to the proposed transfer date due to budget planning.

## **REQUIRED PLANNING EFFORTS**

To complete the LTS Plan, detailed information needs to be available regarding how the various aspects of the LTS program will be implemented. The planning effort to generate this information will ensure that adequate forethought has been given to these issues and that realistic estimates of cost (for the nearer-term planning window) will be generated. In some cases, the necessary planning has already occurred and has been captured in existing documents. In other cases, no detailed planning has yet been undertaken. Where adequate, up-to-date plans or management systems exist, the LTS Plan should reference them. Where adequate plans or systems do not exist, the planning efforts may be documented either in new stand-alone plans, modifications to existing plans, or by including the necessary details in the LTS Plan itself. The following areas should be described or included by reference:

- Operation and maintenance – Description of all work required for operating and maintaining existing remedial systems, including maintenance of facilities in the S&M mode.
- Environmental monitoring – Description of all sampling, analysis, data management, reporting, and other actions related to performance monitoring and release detection from environmental restoration sites, and S&M of contaminated facilities or newly identified sites.
- Periodic performance assessments - The approach and schedule for periodic reviews of remedial system performance and assessment of opportunities to optimize the remedial action by introducing new technologies or approaches.

- Remediation site final closeout - The approach for performing final closeout of no further action or S&M sites, including final verification sampling, removal of completed environmental restoration equipment (e.g., wells, pumps, control systems, phytoremediation trees, fences, radiation monitors, deed restrictions, etc.), facility demolition, and preparation of final closeout reports.
- Information management - Procedures for collecting, reviewing and publishing data on the status of closed or ongoing remedial actions. Location of the data, for easy stakeholder access now and several generations in the future
- Failure detection and recovery (Contingency Plan) - Procedures to be used to ensure a timely and adequate response to process failures, equipment malfunction, unauthorized entry, and unexpected releases.

In addition, summary information should be provided regarding program management, e.g. the site management structure responsible for each element of LTS planning.

## **STATEMENTS OF ROLES, RESPONSIBILITIES, AND COMMITMENTS**

The roles, responsibilities, and commitments needed to implement the LTS program after the transfer, as well as during the transition process, need to be clearly spelled out in the LTS Plan. Examples of some of the responsibilities and commitments needed include the following:

- Information transfer - Commitment by EM to provide all historical information for all waste sites being transferred.
- Completion of ongoing remedial actions - Commitment by LPSO to complete ongoing remedial actions effectively and within the schedule contained in the current EM Baseline.
- Effective Management of the LTS Program - Commitment by LPSO management to perform all required management functions, including the following:
  - Budget programming and allocation;
  - Organizational responsibility for implementing the LTS Program;
  - Compliance with all applicable regulatory requirements contained in IAGs, Permits, DOE Orders, and other regulations;
  - Operations, maintenance, monitoring, surveillance, and reporting as specified in regulatory agencies-approved plans and other documents;

- Land use controls to prevent inadvertent disturbance of closed sites;
- Information management as appropriate;
- Emergency response and corrective action for performance deficiencies;
- Periodic performance reviews and optimization studies;
- Final site closeout documentation; and
- Appropriate level of interaction with stakeholders.

## **FOLLOW-ON ACTIVITIES**

CH Management is aware of the need for programmatic discussions (and ultimately consensus) regarding end state and transfer agreements to ensure a smooth and responsible transition of LTS responsibilities. The pilot project documents are intended to serve as “strawmen” to foster briefings and discussions with SC and NE management during FY 2003.

Advance copies of the pilot project documents have been transmitted informally to SC and NE staff, to be followed by formal transmittals through the responsible Site Offices. Copies of pilot project documentation, as well as this summary report, are intended to be made available on the DOE-CH Office of Projects and Programs (PMO) website. Pilot participants are disseminating information and “lessons learned” from the pilot by presenting results at widely attended conferences and workshops such as the November 2002 Technical Information Exchange workshop and the upcoming Waste Management 2003.

In preparation for continuing discussions with SC and NE, pilot project draft transition requirements will be compared to more recent transition frameworks developed by EM-51. Pilot project draft requirements also will be reviewed for compatibility with the revised draft Real Property Asset Management (RPAM) Order when available.

## **Summary of Lessons Learned**

1. The LTS Program addresses requirements that are similar to other ongoing environmental management requirements. Managing health and environmental risk from former waste sites is essentially identical to managing similar risks from operating systems and environmental control systems. Preventing the disturbance of buried waste or contaminated soil is identical to preventing the disturbance of buried utility lines or underground structures. Creating a separate LTS program, with its own independent Plan, baseline, and organization, may cause inefficiencies and confusion. Fully integrating LTS requirements into the existing management structure without creating additional administrative requirements could be the most efficient way to deal with LTS requirements at a site with an ongoing mission. With this approach, a written plan would only be required to the extent necessary to properly communicate the requirements to the responsible parties.
2. Identification of viable site organization structures for the future LTS programs was difficult. Many of the LTS requirements outlined in the DOE guidance are already being addressed by existing programs (such as monitoring, surveillance, and contingency planning carried out by site Emergency Management groups). Other elements are new work tasks or current tasks that are now being conducted by organizations that may no longer exist after the transfer occurs. Because of the wide variety of activities included under the umbrella of LTS, developing an effective organizational structure will be a complex matter and will require significant involvement (and championship) by site management.
3. The source and mechanism for funding the LTS programs is not yet known. This issue could have significant impact on the organizational structure and implementation of the program. If the program is funded directly, a stand-alone group could be formed to manage the work. However, if it is overhead funded, it is likely that existing organizations will be asked to pick up the responsibilities along with their present work loads. The amount of funding that may be available also will dictate the magnitude and nature of the program. A well-funded program could include many elements (information management tools, improved monitoring technologies, additional staff to respond to inquiries, etc.) that a bare-bones budget program would have to forgo. In some regards, the ANL-E and ANL-W LTS Plans are essentially “wish lists” that were developed to meet draft guidance without regard to budget constraints. It is likely that the next step in the process will be to identify realistic budget constraints and prioritize the LTS program elements to implement the programs in phases as funding allows.
4. During the development of the draft documents, it was not always easy for the sites to obtain the participation and involvement of upper site management and site sponsors. As the time approaches to implement LTS and transition facilities,

the structure and size of the LTS programs may differ significantly from what is assumed in the draft pilot project documents

5. The current DOE guidance required the preparation of a baseline to support the program. However, traditional project management principles are not well suited to an ongoing program with indeterminate duration and highly uncertain scope. Modifications to the typical approach to baseline documentation and project control, such as the use of a planning window, may be required.
6. Developing the pilot study in an atmosphere of great uncertainty (e.g., while DOE LTS program guidance was in the early stages of development) created significant difficulties. As the LTS pilot progressed, there were (and still are) many rumors about future changes to the program that would impact LTS planning. The pilot documents were based primarily on the 2001 draft LTS Plan guidance; however, it was also the intent of the study to develop as complete and accurate planning documents as possible to meet existing site needs. When final DOE guidance is issued, planning documents probably will need to be revised.